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SOOHOO, TONY GLEN				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/777,014

Applicant(s)

LAUGHARN ET AL.

Examiner

Tony G. Soohoo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2008 and 09 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 47-91, 141-145 and 148-162 is/are pending in the application.
- 4a) Of the above claim(s) 47-91, 141-145, 148-156, 158 and 160-162 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 157 and 159 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 4/2008
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of the species of invention identified as Species D, to a reaction vessel (**broad**) with an acoustic source (**specific**), and, in particular, the source having a **specific focal zone of 2 cm** was made. Also, an election to the further subspecies of an acoustic source with an added processor of an exposure control of the acoustic field was made:

In response to the Restriction Requirement dated January 16, 2008, in connection with the above application, Applicants hereby elect, with traverse, Species D (i.e., S4) and subspecies "with added processor, acoustic exposure processor" (as described on page 9 of the Restriction Requirement) for examination.

2. The election was filed in the reply filed on Mar 19 2008, and is acknowledged. The traversal is on the ground(s) that claims "are readable upon Species S4" and "are not directed to distinct inventions and therefore restriction between these claims should not be required." Applicant points to MPEP 806.03 This is not found persuasive because, pursuant to MPEP 806.04, where an application includes claims directed to different embodiments or species that could fall within the scope of a generic claim, restriction between the species may be proper if the species are independent or distinct. See also MPEP 8.06.04(d). As pointed out in paragraphs 1-3 of the election/restriction requirement mailed 01/16/2008, there is no single generic claim present in the claims encompassing all of the identified species, in particular there is no single claim to a reaction vessel (broad) and acoustic energy source (broad). An analysis of the each of the independence and distinction between the species and the subspecies have been made and discussed in the requirement made 01/16/2008.

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3. The Examiner provided an opportunity for Applicant to point out and state on the record that the any differences between the reaction vessel and acoustic energy source of each identified species are obvious variants over one another thereby are not distinct and independent from one another. However applicant has chosen not evidence or statement with regards to each of the identified species.

4. Applicant further state"

Applicants submit that the pending independent claims are all linking claims that encompass the elected species. Pursuant to MPEP 809, these claims should be examined with the elected species and, if found allowable, any restriction between linked species must be withdrawn.

809 Linking Claims [R-5]

There are a number of situations which arise in which an application has claims to two or more properly divisible inventions, so that a requirement to restrict the claims of the application to one would be proper, but presented in the same case are one or more claims (generally called "linking" claims) **>which, if allowable, would require rejoinder of the otherwise divisible inventions. See MPEP § 821.04 for information pertaining to rejoinder practice.<

Linking claims and the inventions they link together are usually either all directed to products or all directed to processes (i.e., a product claim linking properly divisible product inventions, or a process claim linking properly divisible process inventions). The most common types of linking claims which, if allowable, act to prevent restriction between inventions that can otherwise be shown to be divisible, are

(A) genus claims linking species claims; and

(B) subcombination claims linking plural combinations.

Where an application includes claims to distinct inventions as well as linking claims, restriction can nevertheless be required.

5. The examiner is unclear what is meant by applicant's statement with that "the pending independent claims are all linking claims that encompass *the elected species*"

Apparently, does applicant believes that the each presented independent claim is properly divisible inventions, each invention and corresponding independent claim is an independent and distinct invention (species) which is patentable over one another? However applicant has also alleged that the claims "are not directed to distinct inventions and therefore restriction between these claims should not be required." It is requested that applicant clarify what applicant believes as the genus claims and the linking species claims of applicant's "Linking claim" analysis. Absent any supporting evidence, the allegation that the independent claims are linking claims are unpersuasive and unsupported in argument.

6. The requirement is still deemed proper and is therefore made FINAL.
7. Claims 47-91, and 141-145, 148-156 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species of (as chosen between S1-S4, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 03/19/2008.
8. Additionally, claims 158, 160-162 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected sub-species of Acoustic source with added processor of the species D, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 03/19/2008
9. Remaining claims pending for examination upon merits are claims 157 and 159, directed to Species S4, Species D with subgenus: acoustic source with an added processor having the subspecies of an acoustic exposure processor.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

11. Claims 157 and 159 are rejected under 35 U.S.C. 102(b) as being anticipated by Oppelt et al 5,759,162.

12. The Oppelt (et al) reference discloses a "reaction vessel" (in this case a medical office) and holding a sample (a patient) which may flow into and out of the "reaction vessel" (the medical office via doors) and in which an acoustic energy source is provided for providing a focused acoustic field provided by the elements 1, 2 having a diameter less than 2 cm (see column 3, lines 12-38, see especially line 28, whereby the focus zone 9-3db zone is d_{-9dB} = 2.5mm.). Note that the acoustic field may be turned on and off which would control the exposure of the samples to the focused acoustic field.

13. Claims 157 and 159 are rejected under 35 U.S.C. 102(e) as being anticipated by Haller et al 6,010,316 .

14. The Haller (et al) reference (previously cited) discloses a reaction vessel generally 38, 56, 40, 53, (see for example figs. 5-8, 12, 13,) for holding a flow of fluid samples into and out of the vessel via the inlet and outlet, for example as near 49, 51, 73, 74, 84, 86; and additionally having an acoustic energy source 45 (transducer) which is focused via a lens 39, (see figure 5) which is focused to the diameter of the channel 36, which is of a diameter of 10 μm . Column 4, lines 24-25. Note that the acoustic field may be turned on and off which would control the exposure of the samples to the focused acoustic field.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 157 and 159 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Madanshetty 5,681,396.

17. The Madanshetty reference discloses a reaction vessel (not shown, column 9, lines 28-42) which may hold an immersed sample (in this example, a wafer); additionally, a focused an acoustic field is provided to be aimed at particular limited

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portion of the sample wafer to provide a "pin point" processing application of acoustic energy onto the sample which is swept across the wafer, column 9, lines 7-21, this pin point processing provides a cleaning zone of a focus spot, line 17, smaller than the wavelength of the wave frequency utilized. The Mandanshetty teaches that larger frequencies are not as effective with smaller particles. Thus the use of megasonic frequencies would provide a more precise pinpoint processing of the cleaning zone, focus spot in the order of length scales of 1.5mm and 50 μm (column 9, line 13).

Mandanshetty suggests that even as high as 1 and 30 MHz, (column 9, lines 9-21) may be utilized, and even up to 5 MHz to about 80 MHz, column 9, lines 39-40.

18. The Madanshetty reference discloses the use of frequencies which are in the order which would provide focus spot in the order of length scales of 1.5mm and 50 μm (column 9, line 13) which would suggest focal sizes less than 2cm. Nonetheless, in the alternative, in view of the Madanshetty discussion of the utilization of smaller wave length frequencies to provide a more defined focus spot for uniform cleaning effectiveness (column 9, lines 16-19), in light of the knowledge gleaned by the prior art, it would have been obvious to a person having ordinary skill in the art to utilize higher frequencies in the megasonic ranges so that the focus spot is smaller than 2cm to provide a more uniform cleaning effectiveness. Note that the acoustic field may be turned on and off which would control the exposure of the samples to the focused acoustic field.

Response to Arguments

19. Applicant's arguments with respect to NEWLY SUBMITTED claims 157 and 159 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Watmough et al 4889122, and Granz et al 4764905 disclose focused acoustic energy sources to a focal zone or spot.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony G. Soohoo whose telephone number is (571) 272 1147. The examiner can normally be reached on 8AM-5PM, Mon-Thurs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Sample can be reached on 571-272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Tony G Soohoo/

Primary Examiner, Art Unit 1797

Tony G Soohoo

Primary Examiner

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